

RE 129.1260USN 12-May-06

- 3 -

In the claims:

Please amend the claims as shown below:

- 5 1. (Currently amended) A method for continuous alkali oxygen  
delignification of digested cellulose pulp and of cellulose  
pulp that has been washed after digestion, comprising:  
storing which pulp is stored in a storage tower or pulp  
chute at essentially atmospheric pressure, maintaining the  
10 pulp at and that maintains a medium consistency in a the  
range of 8-16%, maintaining the cellulose pulp to be  
delignified at and that maintains a kappa value of at least  
15 units, preferably a kappa exceeding 20, where the oxygen  
delignification takinges place in a reactor system with  
several oxygen reactors with a predetermined retention time  
of the cellulose pulp in the reactor system, addingwhere  
alkali is added to the cellulose pulp in order to obtain an  
initial pH exceeding 9.0, adding and where oxygen is added  
20 to the cellulose pulp at an amount of 5-50 kg per tonne of  
pulp at a position before a first oxygen reactor in the  
reactor system, and providingwhere the pulp withhas a  
predetermined total retention time greater than 45 minutes  
in the reactor system, characterised in that, in  
association with anthe addition of the necessary chemicals  
25 and an initial mixing-in operation for oxygen  
delignification, placing the cellulose pulp is placed under  
pressure in a high pressure section of the reactor system  
at an initial pressure of greater than 15.0 bar, after  
which the pulp passinges at least two reactor volumes with  
30 intermediate remixing positions, setting a where the final  
pressure after a the final reactor volume is at least 13 bar  
at anthe end of the high pressure section, where a the  
retention time  $t_1$  is a the retention time in a reactor  
volume before a the first remixing position  $M_1$  such that,

RE 128.1260USN 12-May-66

- 4 -

when the number of high-pressure reactors is  $X$ , the retention time is  $t_1 - t_x$  for each reactor  $R_1 - R_x$  such that  $t_1 < t_2 < \dots < t_x$ .

5     2. (Currently amended) The method according to claim 1,  
       ~~characterised in that~~ wherein the retention times  $t_1$   
       -  $t_x$  in the reactors  $R_1$  -  $R_x$  in the high pressure section  
       are expressed as:

$t_{\min} = 1$  minute for  $t_1$ , after which ( $t_x = 2 * t_{x-1}$ ) and  $T_{\max} =$   
10  $X * 10$  minutes;

$(t_1=1-10 \text{ min.}, t_2=2-20 \text{ min.}; t_3=4-30 \text{ min.};$   
 $t_4=8-40 \text{ min. etc.}),$   
 where  $t_x < t_{x+1}$ .

3. (Currently amended) The method according to claim 2,  
15 ~~characterised in that wherein oxygen, preferably the~~  
~~major part of the oxygen added for the oxygen stage, is~~  
added to the cellulose pulp immediately after the initial  
pressure of more than 15.0 bar has been established.

4. (Currently amended) The method according to claim 3,  
~~characterised in that wherein~~ the pressure of the  
pulp is reduced after the high-pressure section to a  
pressure that lies under 10-12 bar, and the pulp is heated  
by steam such that the temperature of the pulp is raised by  
at least 5 °C by the addition of steam, followed by the  
heated pulp being led to a reactor system in a low pressure  
section with a retention time that exceeds the retention  
time in the high pressure section.

30 5. (Currently amended) The method according to claim 4,  
characterised in that ~~wherein~~ the remixing positions  
are constituted by fluidizing mixers, either in the form  
of a fluidizing pump, a fluidizing restriction, a  
fluidizing mixer or a restriction in the flow that  
35 results in a fall in pressure of less than 1 bar.

RF 128.1260USN 12-May-06

- 5 -

6. (Currently amended) The method according to ~~any one of the preceding claims, characterised in that claim 1~~  
5 wherein a stirrer is present in at least one high pressure reactor, which stirrer acts in the principal part ~~(greater than 50%)~~ of the reactor volume, either in the form of a mechanical stirrer (S) or hydrodynamic stirrers that at least circulate free fluid in the reactor.
- 10 7. (Currently amended) The method according to ~~any one of the preceding claims, characterised in that claim 1~~  
wherein at least one of the oxygen and alkali additions are ~~can be~~ added to the cellulose pulp in association with the remixing positions in the high pressure section at an  
15 amount that is lower than the amount that is added at the initial mixing-in operation, and ~~in that~~ at least one of the oxygen and alkali additions ~~are~~ ~~can be~~ added batch-wise at the beginning of the low pressure section.
- 20 8. (Currently amended) The method according to ~~any one of the preceding claims, characterised in that claim 1~~  
wherein the cellulose pulp is dewatered before the oxygen delignification to a higher consistency and the cellulose  
25 pulp ~~in that it~~ is rediluted before the oxygen delignification to a medium consistency with pure filtrate that has ~~preferably~~ been previously oxidized, and ~~in that~~ alkali in the form of oxidized white liquor is used in the oxygen delignification.

30